

REMARKS

Applicants respectfully solicit favorable reconsideration followed by Notice of Allowance after entry of this Amendment.

Applicants have retained original claims 1-8 and added new claims 9-12. The new claims are method claims based on the original disclosure, including original claims 1-4.

Applicants respectfully submit their claims 1-8 define novel inventions over the Hasegawa et al. reference, U.S. Patent No. 6,559,231.

The Examiner contends Hasegawa discloses a curing type water base resin composition which comprises a copolymer (I) obtained by copolymerizing an ethylenically unsaturated monomer (a) having a maleimide group and other ethylenically unsaturated monomers (b) and (c).

The Examiner also contends that the monomer (a) having a maleimide group is a compound having Formula (1) in which R1 and R2 each can be alkyl group. Office Action, page 2, last paragraph.

However, Hasegawa generally discloses a Formula (1) in which R1 and R2 can be an alkyl group, but does not specifically disclose the present Formula (1) in which either of R1 and R2 is hydrogen as claimed in the present application. Please refer to the description from col. 2, line 32 through col. 3, line 38 of Hasegawa.

Applicants' position is that the definition of R1 and R2 of Hasegawa does not necessarily disclose the case in which R1 is hydrogen and R2 is an alkyl as in the present Formula (1), and thus the present claims define novel inventions over Hasegawa.

Moreover, the present invention is further featured in that the claimed compound having maleimide groups is liquid at ordinary temperature. *See, e.g.*, specification, page 35, last paragraph.

Hasegawa appears to disclose that the maleimide copolymer (I) has a number average molecular weight falling in a range of usually 1,000 to 1,000,000 (*see* col. 7, lines 9-12), but the maleimide copolymers disclosed in the working examples of Hasegawa are all solid at ordinary temperature.

In fact, the glass transition temperature (Tg) of the maleimide copolymers (I) which are described in the Production Examples of Hasegawa can be calculated on the basis of Table 1 of column 18, as shown below:

Calculation method of Tg:

$$1/T_g = CA/T_{gA} + CB/T_{gB} + \text{-----} + CX/T_{gX}$$

in which CA, CB ---- and CX are weight fractions of components A, B ---- and X respectively, provided that $CA + CB + \text{----} + CX = 1$, and TgA, TgB ---- and TgX are Tgs (°K) of homopolymers of components A, B ---- and X respectively.

The calculated Tg's of the copolymers A-1, A-2, A-3 and A-4 of Table 1 of Hasegawa are as follows:

	Constituent monomers (parts)						Tg (°C)
	MIA	DAA	BMA	MMA	BA	MA	
A-1	10	5	50	20	14	1	26.6
A-2	10	10	45	20	14	1	29.1
A-3	10	5	50	20	14	1	26.6
A-4	10	0	55	20	14	1	24.1

MIA: Imide acrylate of formula (11) of Hasegawa (65°C (338°K)),
DAA: Diacetoneacrylamide (77°C (350°K)),
BMA: n-Butyl methacrylate (20°C (293°K)),

MMA: Methyl methacrylate (105°C (378°K)),
BA: n-Butyl acrylate (-54°C (219°K)),
MA: Methacrylic acid (130°C (403°K)).

Apparently from the above Table, the Tg's of the copolymers A-1, A-2, A-3 and A-4 of Hasegawa are all near ordinary temperature. Thus, the copolymers of the working examples of Hasegawa are never liquid at ordinary temperature.

Hasegawa discloses in passing, for instance, that the compound can be used as an adhesive or a pressure sensitive adhesive together with a coating agent, a cure-finishing agent for fibers, a water repellent, a sealant and a binder. *See e.g.*, column 16, lines 24-32, Hasegawa only discloses the performance of the coating agent in the working examples, but does not deal with any specific performance of the compound as a pressure sensitive adhesive. Advantages of the present composition are as described below.

Thus, the present invention is not anticipated by Hasegawa.

Applicants submit their claims 1-8 define novel inventions over the Okazaki reference, U.S. Patent No. 6,645,617 B1.

The Examiner contends Okazaki discloses a pressure sensitive adhesive composition curable with active energy beams which comprises a copolymer obtained from an ethylenically unsaturated monomer having a maleimide group and another ethylenically unsaturated monomer, and a pressure sensitive adhesive sheet formed of the above composition on a substrate.

However, Okazaki generally discloses a Formula (1) in which R1 and R2 can be an alkyl group, but does not specifically disclose the present Formula (1) in which either of R1 and R2 is hydrogen as claimed in the present application. *See*, col. 2, line 33 through col. 3, line 33 of Okazaki.

Again, Applicants' position is that the definition of R1 and R2 of Okazaki does not necessarily disclose the case in which R1 is hydrogen and R2 is an alkyl as in the present formula (1), and thus the present, claims with Formula (1) as novel.

Thus, the present invention is not anticipated by Okazaki.

Lastly, Applicants respectfully submit that their inventions would not have been suggested by either of the Hasegawa or the Okazaki references.

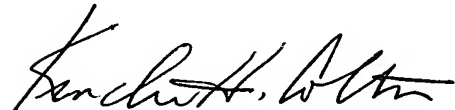
Advantages of the present compound having two or more maleimide groups represented by the Formula (1) and being liquid in ordinary temperature as in present claims 1, 5 and 9 are shown in the present specification in comparison with compounds having other maleimide groups. Particularly, please refer to Examples 1-11 and Comparative Examples 1 and 3 shown in page 47, Table 1 of the present specification. Specifically, Examples 1-11 were excellent in pressure-sensitive adhesive strength, SAFT, tack, water-resistance and yellowing. However, Comparative Example 1 in which a compound having tetrahydromaleimide group of page 42, Formula (7), excluded from the present Formula (1), was inferior in SAFT, and Comparative Example 3, in which a compound having a maleimide group of page 43, Formula (8) excluded from the present Formula (1), was inferior in water-resistance.

Having addressed all matters, Applicants earnestly, but respectfully, solicit favorable reconsideration and a Notice of Allowance.

Respectfully submitted,

FITCH, EVEN, TABIN & FLANNERY

Date: **November 28, 2005**


Kendrew H. Colton
Registration No. 30,368

OFFICIAL CORRESPONDENCE TO
Customer No. 42798
FITCH, EVEN, TABIN & FLANNERY
1801 K Street, NW, Suite 401L
Washington, DC 20006
Tel: (202) 419-7000
Fax: (202) 419-7007